

ABSTRACT

The invention relates to a porous silicate granular material, especially as aggregate for the production of construction materials such as lightweight concrete, mortar or heat-insulating plaster containing glass and a glassy-crystalline component comprising 45 to 85 wt.% SiO_2 , 5 to 20 wt.% alkali oxide, 5 to 30 wt.% alkaline earth oxide and 2 to 30 wt.% of other oxides such as Al_2O_3 and/or Fe_2O_3 , whereby the glassy crystalline component accounts for 5 to 75 wt.% of the granular material. The glassy crystalline component of the granular material according to the invention is the sinter reaction product of a mixture of quartz powder and/or another essentially pure fine-grained SiO_2 carrier, a powdered clay and/or powdered clay mineral, Portland cement, caustic soda and an expanding agent as least one additive.

In addition a method of producing such a granular material is described in which said mixture is agglomerated at a temperature of 20 °C to 150 °C at normal pressure with the water vapour partial pressure being adjusted, selected or controlled as a function of time-temperature and carbon dioxide being excluded or admitted, whereby the admission of carbon dioxide is controlled by adjusting or selecting the carbon dioxide partial pressure, the intermediate product is crushed and graded if necessary, and the intermediate product thus obtained is heated at normal pressure with the carbon dioxide partial pressure and/or the water vapour partial pressure being adjusted, selected or controlled as a function of time-temperature, to a temperature of 700 °C to 1250 °C and sintered and expanded at this temperature.